

Amendment and Response

Serial No.: 10/620,548

Confirmation No.: 8448

Filed: 16 July 2003

For: DELIVERY OF HYDROGEL COMPOSITIONS AS A FINE MIST

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Amendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1. **(Currently Amended)** A spray device comprising:
 - a container;
 - an aqueous dental composition in the container, the composition comprising about 10% by weight to about 50% by weight of a thermally responsive viscosity modifier based on the total weight of the composition, and water, wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature;
 - a ~~propellant~~ propellant, with the proviso that the propellant is not air; and
 - a sprayer in fluid communication with the dental composition, the device being capable of spraying the dental composition as a fine mist into the oral environment, wherein the viscosity of the composition at the treatment temperature is at least about 10 times the viscosity of the composition at the pre-treatment temperature.
- 2-3. **(Canceled)**
4. **(Currently Amended)** A dental composition ~~capable of being sprayed as a fine mist into the oral environment, the composition~~ comprising:
 - about 10% by weight to about 50% by weight of a thermally responsive viscosity modifier based on the total weight of the composition;
 - water; and
 - a propellant, with the proviso that the propellant is not air,wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature, and

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wherein the viscosity of the composition at the treatment temperature is at least about 10 times the viscosity of the composition at the pre-treatment temperature,

wherein the dental composition is capable of being sprayed as a fine mist into the oral environment.

5. (Previously Presented) The dental composition of claim 4 wherein the pre-treatment temperature is at most about room temperature.
6. (Previously Presented) The dental composition of claim 4 wherein the treatment temperature is about body temperature.
7. (Previously Presented) The dental composition of claim 4 wherein the thermally responsive viscosity modifier is a polyoxyalkylene polymer.
8. (Previously Presented) The dental composition of claim 4 wherein the viscosity of the composition at the treatment temperature is about 10 times to about 100 times the viscosity of the composition at the pre-treatment temperature.
9. (Previously Presented) The dental composition of claim 4 wherein the dental composition comprises about 17% by weight to about 40% by weight of a thermally responsive viscosity modifier.
10. (Previously Presented) The dental composition of claim 4 wherein the aqueous composition further comprises a salt.
11. (Previously Presented) The dental composition of claim 4 wherein the composition further comprises an adjuvant.

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12. **(Previously Presented)** The dental composition of claim 11 wherein the adjuvant is selected from the group consisting of acids, peroxides, fluoride sources, medicaments, stability promoters, acid neutralizers, preservatives, adhesive modifiers, fillers, dyes, flavorings, sweeteners, and breath fresheners.
13. **(Previously Presented)** The dental composition of claim 11 wherein the adjuvant is selected from the group consisting of anti-microbial agents, anti-calculus agents, anti-fungal agents, cariostatic agents, local anesthetics, enzymes, and sodium bicarbonate.
14. **(Currently Amended)** A spray device comprising:
- a container;
 - an aqueous dental composition in the container, the composition comprising:
 - about 10% by weight to about 50% by weight of a thermally responsive viscosity modifier based on the total weight of the composition;
 - an adjuvant selected from the group consisting of acids, peroxides, fluoride sources, medicaments, stability promoters, [[.]] preservatives, adhesive modifiers, fillers, dyes, flavorings, sweeteners, and breath fresheners; and
 - water; wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature; and
 - a sprayer in fluid communication with the dental composition, the device being capable of spraying the dental composition as a fine mist into the oral environment.
15. **(Previously Presented)** A spray device comprising:
- a container;

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an aqueous dental composition in the container, the composition comprising:
about 10% by weight to about 50% by weight of a thermally responsive
viscosity modifier based on the total weight of the composition;
an adjuvant selected from the group consisting of anti-microbial agents,
anti-calculus agents, anti-fungal agents, cariostatic agents, local
anesthetics, glucose oxidases, and lactoperoxidases; and
water; wherein the composition is in a low viscosity state at a pre-
treatment temperature and a highly viscous state at a treatment
temperature that is higher than the pre-treatment temperature; and
a sprayer in fluid communication with the dental composition, the device being
capable of spraying the dental composition as a fine mist into the oral environment.

16-17. (Canceled)

18. (Currently Amended) A dental composition capable of being sprayed as a fine mist into
the oral environment, the composition comprising:

about 10% by weight to about 50% by weight of a thermally responsive viscosity
modifier based on the total weight of the composition;

water; and

an adjuvant selected from the group consisting of acids, peroxides, fluoride sources,
medicaments, stability promoters, preservatives, adhesive modifiers, fillers, dyes, flavorings,
sweeteners, and breath fresheners, wherein the composition is in a low viscosity state at a pre-
treatment temperature and a highly viscous state at a treatment temperature that is higher than the
pre-treatment temperature,

wherein the composition is in the form of a fine mist.

19. (Currently Amended) A dental composition capable of being sprayed as a fine mist into

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the oral environment, the composition comprising:

about 10% by weight to about 50% by weight of a thermally responsive viscosity modifier based on the total weight of the composition;

water; and

an adjuvant selected from the group consisting of anti-microbial agents, anti-calculus agents, anti-fungal agents, cariostatic agents, local anesthetics, glucose oxidases, and lactoperoxidases, wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature,

wherein the composition is in the form of a fine mist.

20. (Previously Presented) The dental composition of claim 18 further comprising a propellant.
21. (Previously Presented) The dental composition of claim 20 with the proviso that the propellant is not air.
22. (Canceled)
23. (Previously Presented) The dental composition of claim 19 further comprising a propellant.
24. (Previously Presented) The dental composition of claim 23 with the proviso that the propellant is not air.
25. (Canceled)

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26. **(Previously Presented)** A spray device comprising:
- a container;
 - an aqueous dental composition in the container, the composition comprising:
 - about 10% by weight to about 50% by weight of a thermally responsive viscosity modifier based on the total weight of the composition;
 - an effective amount of an acid neutralizer active agent; and
 - water; wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly viscous state at a treatment temperature that is higher than the pre-treatment temperature; and
 - a sprayer in fluid communication with the dental composition, the device being capable of spraying the dental composition as a fine mist into the oral environment.
27. **(Previously Presented)** The spray device of claim 26 wherein the acid neutralizer comprises baking soda.
28. **(Previously Presented)** The spray device of claim 26 further comprising a propellant.
29. **(Previously Presented)** The spray device of claim 28 with the proviso that the propellant is not air.
30. **(Currently Amended)** A dental composition capable of being sprayed as a fine mist into the oral environment, the composition comprising:
- about 10% by weight to about 50% by weight of a thermally responsive viscosity modifier based on the total weight of the composition;
 - water; and
 - an effective amount of an acid neutralizer active agent,
- wherein the composition is in a low viscosity state at a pre-treatment temperature and a highly

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viscous state at a treatment temperature that is higher than the pre-treatment temperature,
wherein the composition is in the form of a fine mist.

31. **(Previously Presented)** The dental composition of claim 30 wherein the acid neutralizer comprises baking soda.
32. **(Previously Presented)** The dental composition of claim 30 further comprising a propellant.
33. **(Previously Presented)** The dental composition of claim 32 with the proviso that the propellant is not air.
34. **(Canceled)**